

REMARKS

In this response, claims 1, 5, 9, 15, 20, and 26 have been amended. Support for these amendments is found throughout the originally submitted application. No new matter has been added.

Claims 1-30 are presently pending.

Rejections under 35 U.S.C. § 103

Claims 1-31 stand rejected under 35 U.S.C. § 103 (a) as being unpatentable over US Patent 5,402,004 issued to Ozmat et al ("Ozmat") in view of US Publication 2003/022732 A1 filed by Dessiatoun et al ("Dessiatoun") and further in view of US Publication 2002/0108743 A1 filed by Wirtz ("Wirtz") or, alternatively, in view of US Publication 2004/0022027 A1 filed by Weber et al. ("Weber").

Claim 1 has been amended and now discloses an apparatus comprising a heat source with at least one integrated circuit, a heat exchanger, and

a thermal management device having a case including a cavity and a microporous medium disposed within and filling the cavity, the thermal management device to allow for a fluid to flow through said cavity and microporous medium to thermally couple the heat source to the heat exchanger.

In the Office Action, it is stated that while the Ozmat/Dessiatoun combination does not specifically disclose a microporous medium, Wirtz and Weber do.

The Federal Circuit has stated that "obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching suggestion or incentive supporting the combination." *See In re Geiger*, 815 F.2d 686 (Fed.Cir. 1987). Because there is no teaching, suggestion, or incentive for combining these cited documents in a way to make the claimed invention obvious as a whole, a 103 rejection based upon such a combination is improper.

Although not specifically stated, it appears that the Examiner relies upon motivation to combine various teachings of these cited articles stemming from the

position that Ozmat discloses a metal sponge; Wirtz/Weber disclose a porous medium of a micro scale; and both Ozmat and Wirtz/Weber are used in heat transfer systems. Even assuming these positions are correct, there is still insufficient motivation to substitute the type of medium used in Wirtz/Weber (microporous medium) for the medium of Ozmat (metal sponge), as it is used in Ozmat.

Ozmat, as stated in Applicant's response dated June 30, 2005, teaches that its metal sponge should offer little resistance to fluid flow. See *Ozmat*, column 3, lines 49-53. The microporous mediums discussed in Wirtz/Weber, on the other hand, provide significant resistance to flow. It is precisely this increased flow resistance that makes the microporous medium attractive in Weber's application because it captures the liquid portion of the two-phase flow, thereby preventing it from being propelled past the heat transfer surfaces without absorbing heat. See *Weber*, paragraph 26. However, the majority of the fluid flow takes place through the channels 22 where the medium is not present.

This increased flow resistance is also relied upon in Wirtz to provide airflow properties through a sigmoidal arrangement of the porous medium. It may be noted that, like Weber, the arrangement in Wirtz allows for much of the airflow to travel through large areas not occupied by the porous medium, i.e., the interstices 36 that are elongated in the direction of flow, while the airflow only travels briefly through the porous medium when it passes from the inflow opening to the outflow opening. See *Wirtz*, Fig. 7 and associated discussion.

Ozmat teaches away from using a medium with significant resistance to flow. The mediums discussed in Wirtz/Weber provide significant resistance to flow, and in order to accommodate for said resistance, provide unobstructed flow paths to permit significant fluid flow through areas not occupied by the mediums. Therefore, there is insufficient motivation to substitute the type of material used in Wirtz/Weber for the metal sponge of Ozmat without employing similar accommodations, i.e., unobstructed flow paths.

Because there is no teaching, incentive or motivation to combine the above articles in a manner that would result in a microporous medium being disposed within and filling a cavity of a thermal management device, as recited in amended claim 1, for example, the combination does not make the invention as a whole obvious.

For at least the foregoing reasons, the Applicants submit that claim 1 is nonobvious over the cited articles and is in proper form for allowance. Claims 2-31 either depend from, or include limitations similar to, claim 1. Therefore, for at least the above reasons, these claims are also in proper form for allowance.

CONCLUSION


In view of the foregoing, Applicants respectfully submit that the application complies with all formal requirements. Thus, early issuance of Notice of Allowance is respectfully requested.

The Commissioner is hereby authorized to charge shortages or credit overpayments to Deposit Account No. 500393. .

Should there be any lingering questions, Applicant invites the Examiner to call the undersigned to have the questions resolved to allow the subject application to expeditiously pass to issuance.

Respectfully submitted,
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Dated: September 27, 2005


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